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Ms. Donna R. Searcy
Federal Communications Commission
1919 M Street, N.W. - Room 222
Washington, D.C. 20554

June 23, 1993

Re: **Comments of The Part 15 Coalition in Pr Docket 93-61**

Dear Madam Secretary:

Transmitted herewith are an original and nine copies of the comments of the Part 15 Coalition in the above referenced proceeding.

If you have any questions with regard to this matter, please do not hesitate to contact me. I can be reached at 408/735-6690.

Sincerely,

Steve Schear
Chairman, Part 15 Coalition

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Before the

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 90 of the	)	PR Docket NO. 93-61
Commission's Rules to Adopt	)	RM-8013
Regulations for Automatic	)	
Vehicle Monitoring Systems	)	

TO: The Commission

COMMENTS OF THE PART 15 COALITION

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THE PART 15 COALITION

June 28, 1993

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SUMMARY

The Part 15 Coalition ("The Coalition") opposes the changes, contained in PR Docket 93-61, in the rules governing use of the 902-928 Mhz band ("900 MHZ"). These changes will:
(1) unnecessarily expand the permissible use of the band to include location and messaging; (2) give two licensees exclusive rights to eight MHz (each), and (3) grandfather licensees that have acquired but not built automatic vehicle monitoring ("AVM") systems.

The collective effect of these changes will be to dramatically increase the interference level among all users of the 900 MHz band and upset the sharing balance which has allowed the multi-billion dollar Part 15 industry to develop and prosper.

Part 15 applications have flourished under the existing rules. Hundreds of wireless applications are currently in the marketplace providing a range of services from utility metering and security surveillance to medical telemetry and collision avoidance.

[redacted]

Market studies indicate that the new higher powered digital cordless phones will have the same (or better) phenomenal market acceptance as has the analog cordless phone. This could result in tens of millions of cordless phones operating in this band in the next several years.

The combination of expanding the AVM rules to promote location monitoring and messaging and the explosion in the numbers of unlicensed Part 15 products is a recipe for a public policy disaster of the first order. Expansion of AVMs will cause electromagnetic interference levels to increase dramatically. This will increase the tension between licensed AVMs and unlicensed owners of Part 15 equipment and force the Commission to arbitrate interference complaints between commercial and consumer Part 15 owners on the one hand and licensed AVM operators on the other.

The Coalition believes that the Commission should abandon the proposed expansion of the use of this band for widespread location, monitoring and messaging services and return the use of this band to its current shared Part 15/AVM use. Returning to the status quo ante will allow continued use by licensed AVMs and continued access to Part 15 equipment.

Further, The Coalition believes that the Commission should encourage an industry solution to the mutual interference problem now and not wait until the situation worsens. An industry technical committee, under the auspices of the Commission's Office of Engineering and Technology, should be formed to work out a

Finally, the Commission should, coincident with scaling back the expansion of AVM, reduce the spectrum used by AVM's from 8 MHz to 4 MHz. The 4 MHz bandwidth reflects current use of bandwidth in AVMs and would help reduce interference potential in this band.

In sum, the proposals to expand AVMs will cause widespread interference to both Part 15 and AVM users. Further, because of the widespread consumer use of the Part 15 devices, the Commission would be precluded from enforcing any priority of use between licensed and unlicensed service.

The only acceptable solution to this dilemma is to return to the status quo ante and to constitute an industry technical committee to develop industry negotiated technical rules to govern the use of this band.

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To the Commission:

COMMENTS OF THE PART 15 COALITION

The Part 15 Coalition ("The Coalition")[1], by its attorney, hereby submits its comments in response to the FCC's Notice of Proposed Rulemaking ("NPRM") in the above captioned proceeding which proposes extensive changes to the interim rules governing Automatic Vehicle Monitoring ("AVM") systems.

I. INTRODUCTION

The Coalition, represents over 30 companies involved in the development and marketing of unlicensed wireless products designed to operate under the Commission's Part 15 rules. The following are a few examples of the hundreds of application specific devices

[1] The Part 15 Coalition is comprised of over 30 companies that are in the business of producing and selling Part 15 compliant wireless devices. The bulk of the sales in the Part 15 902-928 MHz band. Attachment #2 contains a complete list of the companies that participate in the Part 15 coalition.

produced by manufacturers under the Part 15 rules: digital cordless telephones, electronic article surveillance equipment, utility meter devices, fire and security alarm devices, wireless bar code readers, airborne and marine collision avoidance systems and other point-to-point and point-to-multipoint devices. A more complete list is provided at Attachment #1.

These products were made possible by the Commission's liberal Part 15 rules which encouraged companies to invest in the development of unlicensed products in this band. In compliance with the Part 15 rules, manufacturers have implemented the most advanced radio technology, including spread spectrum, to permit interference sharing among other unlicensed Part 15 devices and other users of the 902-928 MHz band. These manufacturers have invested over nearly 2 billion dollars and have established a major wireless industry through compliance with and reliance upon the FCC's Part 15 rules. This proceeding places that industry in jeopardy.

The rule changes proposed in this NPRM[2] fundamentally alter the conditions under which this new industry for unlicensed Part 15 applications developed. The existing rules created an environment whereby the users complied with the technical rules, protected the primary ISM and government users and co-existed with the nascent AVM industry in order to operate license-free. The Part 15 users have complied with both the letter and spirit of the rules.

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[2] Notice of Proposed Rulemaking, PR Docket No. 93-61, adopted March 11, 1993, FCC 93-141 ("NPRM").

extensive messaging service within the new service.[3] This new expanded service will be redesignated Location and Monitoring Service ("LMS"). Additionally, the NPRM proposes permanent rules which may grant exclusive rights to existing AVM licensees to operate as private carriers operating under Part 90 rules. These changes will encourage a major expansion of current AVM systems and, because of the high power operations proposed for LMS, will cause serious disruption and interservice interference to both AVM and Part 15 devices.

Current AVM systems operate within the 900 MHz band under interim rules established in 1974.[4] This band is shared among a number of non-AVM users and a cooperative sharing balance has developed among the various Part 15 users of this band. Literally, hundreds of Part 15 applications co-exist interference-free. This benign co-existence is made possible through the use, by Part 15 manufacturers, of advanced technology and carefully controlled power limits.

It is this balance between low-powered advanced technology systems and higher powered AVM systems which the expansion of AVM use will upset. LMS will deploy admittedly fragile technology[5]

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[3] Examples of the proposed messaging service is included at Attachment #3. The PacTel Teletrac ("PacTel") proposed "personal information service" could develop, within the proposed rules for LMS, into a full-blown, two-way messaging service that could dwarf the vehicle location component of LMS. In the attachment, PacTel describes the service as follows: 'PacTel is developing a menu of inexpensive and easy-to-use information services **consumers can use many times, every day** (emphasis added).

[4] Report and Order, Docket No. 18302, 30 RR 2d 1665 (1974).

[5] See, North American Teletrac and Location Technologies, Inc., Petition for Rulemaking, RM-8013 (filed May 28, 1992), Appendix #2 ("PacTel Petition").

using centralized and nomadic transceivers to provide the extensive coverage required for an expanded LMS. The extensive changes proposed in this rulemaking dealing with eligibility, permissible use and licensing will lead to widespread deployment of infrastructure to support these changes. Inevitably, these changes will insure that LMS will interfere with and be interfered by existing Part 15 equipment.

It is, therefore, inappropriate to expand the permissible use of this band and formally establish an exclusive right within this band, without first evaluating the level of interference which will result and the scope and importance of competing uses. Furthermore, given the multitude of location and messaging options available to the consumer in other services and other spectrum,[6] the public interest served by the hundreds of applications of Part 15 devices far outweighs the more limited public interest served by expanding the use of this band to provide "one more" approach for the location of objects and people.

A. THE COMMISSION SHOULD ABANDON THE PROPOSED EXPANSION OF THE 900 MHz BAND AND RETURN ALL PARTIES TO THE STATUS QUO ANTE.

In 1985, the FCC published rules which encouraged and facilitated the commercial development of advanced radio technology.[7] The Commission permitted unlicensed operation in the

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[6] Location and Messaging services are available over many different media. Satellite based systems abound. Additionally, inexpensive GPS technology allows location and messaging service to be provided over cellular, SMR and FM subcarrier frequencies as well.

[7] Report and Order, Gen. Docket 81-413, adopted May 9, 1985 (FCC 85-245).

902-928 MHz band contingent upon adhering to specified power limits. In order to spur commercial development of spread spectrum technology, these power limits were increased for systems specifically employing spread spectrum.[8] Not surprisingly, commercial development of spread spectrum technology flourished. In 1990, the Commission further refined the rules governing unlicensed wireless applications and today Commission rules allow spread spectrum technology to operate license-free with output power as high as 1 watt at the transmitter.

The combination of the liberalized technical rules and the ability to operate devices without a license caused the creation of a new wireless industry sector operating under the Part 15 rules. In response to these new rules, the Part 15 industry invested nearly two billion dollars in research, development and production of new commercial and consumer products. The bulk of the products were developed for the 902-928 MHz band. The commercial products developed as a result of that investment have been in the marketplace for several years. Consumer devices are just now entering the marketplace. In fact, 1993 will be a watershed year for consumer products operating in the 902-928 MHz band.[9]

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[8] See, 47 C.F.R., Section 15.257.

[9] By way of example, several companies have already introduced new 900 MHz cordless phones into the marketplace. One company (COBRA) has introduced a 900

The explosion of 900 MHz consumer products in the next several years will create a difficult challenge to the existing Part 15 products to continue to operate interference-free. The action proposed by the Commission to expand the use of the 900 MHz band for a licensed location service will turn a difficult situation into an impossible situation.

The rapid introduction of relatively high-powered consumer devices in the 900 MHz band will strain the relationship between licensed and unlicensed operation. In this regard, it is foreseeable that the Part 15 digital cordless phone industry will experience the same (or perhaps greater) rapid market acceptance that was experienced by the low-powered cordless phones. Within the next few years there will be as many as several million Part 15 cordless phones operating in the 900 MHz band. Moreover, the nomadic nature of consumer devices precludes action by the Commission to enforce any priority of use between licensed and unlicensed consumer products. Accordingly, the Commission can only make the 900 MHz situation worse by encouraging the expansion of the AVM service beyond the existing AVM rules.

Companies were aware of the existence of the interim rules for automatic vehicle monitoring systems. They weighed the advantages and disadvantages of coexistence when initially investing in advanced technologies which operated under Part 15 and the probability that the then-existing automatic vehicle monitoring systems would proliferate. The Part 15 companies assumed what they believed to be an acceptable risk.

Part 15 technology developers never had any warning nor could they reasonably foresee that the Commission, eight years after encouraging Part 15 development, would propose to greatly expand the use of this band beyond vehicle monitoring into a broad based location and messaging service. The expansion into location and messaging will cause severe interference problems between commercial and consumer Part 15 products and LMS systems.

There is no public interest served by the proposed action FCC to permit destructive interference in the 900 MHz band. However, short of completely eliminating AVM use of this band, preserving the status quo is the only fair and equitable solution to the current situation. Similarly, there is no public interest served by FCC action to expand the use of the AVMs. In fact, an FCC decision to abandon the proposed rule changes will return all parties to their original position which will make the best of a difficult situation.

B. AVM SYSTEMS DO NOT NEED 8 MHZ OF SPECTRUM FOR VEHICLE LOCATION AND MONITORING.

If the Commission agrees to maintain the AVM rules and rejects the radical expansion of the rules to allow location and monitoring, then the Commission should restrict the allowable bandwidth for wideband AVM to 4 MHz. In fact, the current Teletrac system is operating today with 4 MHz. As PacTel stated in their January 14, 1993 filing in this proceeding,[10] the other

[10] Response of North American Teletrac and Location Technologies dba PacTel Teletrac to the Comments of the Missile Group Old Crows (January 14, 1993).

4 MHz is: "...intended to be used as the number of subscribers increases and **new services are introduced**"(emphasis added).[11] Moreover, the comments in this proceeding support the ability of current technology to provide AVM using 4 MHz or less spectrum. Southwestern Bell Corporation advised the Commission in this proceeding that they were investigating wide band, pulse ranging technologies that operated at 4 MHz.[12]

There are two direct benefits from reducing the wideband AVM allocation from 8 MHz to 4 MHz. First, the overall congestion in the 900 MHz band will be reduced and the occurrence of

C. THE PROPOSED TELETRAC SYSTEM IS TECHNICALLY INCOMPATIBLE WITH PART 15 DEVICES.

There are hundreds of thousands of application specific Part 15 devices and soon will be thousands of lines of wireless PBX and wireless Centrex, in addition to millions of consumer owned cordless phones all operating in the 900 MHz band. Interference with LMS systems is inevitable.

As noted earlier, 1993 is a watershed year for Part 15 equipment. In addition to the application specific devices in the marketplace today, there are now several companies introducing

10 watts. The results of this hypothetical interferer are to severely reduce the available service area.

The fragility of the Teletrac system was also highlighted in comments submitted in this proceeding by Pinpoint and Amtech[14]. Specifically, Pinpoint said: "...the PacTel system is unnecessarily fragile and possibly incapable of sharing with other systems that already use this band. **This is especially true with respect to Part 15 devices such as cordless telephones, which the Commission has encouraged to relocate at 902-928 MHz.** (emphasis added). Simply put, PacTel is a poor spectral neighbor, as others have noted."[15]

The fragility in their system, coupled with the explosive growth in Part 15 equipment places the FCC squarely on notice that expanding the AVM rules to allow location monitoring and messaging will cause an unreasonable level of electromagnetic interference to both unlicensed Part 15 equipment and licensed AVM systems. Therefore, this technical incompatibility will result in neither LMS nor Part 15 devices being able to serve their customers properly. Accordingly, the FCC should not authorize LMS as contemplated in the MPRM.

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[14] See, Pinpoint Opposition at 14-22; Opposition of Amtech, RM 8013 at 40-44 (filed July 23, 1992).

[15] See Pinpoint Opposition to Informal Objection, RM No. 8013 at 8 (filed July 23, 1992).

D. THE COMMISSION SHOULD CONVENE A JOINT TECHNICAL COMMITTEE TO INVESTIGATE TECHNICAL SOLUTIONS TO PERMIT COOPERATIVE AND INTERFERENCE LIMITED SHARING AMONG ALL USERS OF THE 900 MHz BAND.

AVM proponents and Part 15 equipment manufacturers could meet in a joint technical committee to explore technical solutions to the electromagnetic interference issue. The Coalition has written to PacTel on several occasions requesting the establishment of a

E. ALTERNATIVE SPECTRUM EXISTS TO ACCOMMODATE LMS SYSTEMS AND ALTERNATIVE VEHICLE LOCATION TECHNOLOGIES AND SERVICES ARE ALREADY PROVIDING THESE SERVICES.

The Commission, in their personal communications services (PCS) NPRM,[16] identified 220 MHz in the 2 GHz band last summer for new and emerging technologies. Moreover, the Commission has already identified 3 MHz (930-931, 901-902/940-941) in the 900 MHz band for narrowband PCS.[17] This allocation will accommodate inter alia, advanced messaging and paging systems. Finally, an additional 200 MHz of spectrum will likely be reallocated from the Federal Government to the FCC for new and emerging technologies.[18] Accordingly, there is no shortage of available spectrum for the services proposed in this rulemaking.

Further, LMS systems as defined in this proceeding, would fit the very expansive definition of PCS which the FCC described in the NPRM.

> "A family of mobile or portable radio communications services which could provide services to individuals and business, and be integrated with a variety of competing networks".

In fact, during the PCS Pioneers Preference proceeding TRX TRANSTEL submitted a very innovative preference proposal to

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[16] Amendment of the Commission's Rules to Establish New Personal Communications Services, Gen. Docket No. 90-314, ET Docket 92-100 ("PCS NPRM") 1992).

[17] Id.

[18] A House bill, which is part of the budget reconciliation package, contains language that directs the Commerce Department to identify 200 MHz of spectrum to be transferred from the public to the private sector. This bill has passed the House. A companion Senate version (S335), contains similar language.

provide location and messaging service. They proposed to use PCS spectrum in a low-powered configuration at over 5000 locations nationwide to provide vehicle location, two-way messaging and vehicle data services. Once the PCS allocation is made, vehicle and personal locator systems such as TRX TRANSTEL'S will thrive.[19]

Most importantly, the Commission will shortly address the narrowband PCS allocation and licensing in the 900 MHz band. These 900 MHz PCS services will closely resemble the messaging portion of the service Teletrac is proposing to operate in the expanded AVM. (Attachment #3 contains marketing information on the messaging portion of the Teletrac system.) Interestingly, PacTel is also a major proponent of using the 900 MHz narrowband PCS spectrum for an advanced technology messaging system.

As part of the Commission's considerations in the narrowband PCS, a request for a Pioneers Preference (and an accompanying petition for rulemaking) was submitted by PacTel Paging[20] for "Advanced Architecture Paging ("AAP")". As described by PacTel:

> "AAP is a platform upon which existing and enhanced messaging capabilities, including enhanced character sets, low and high resolution graphics, video, E-Mail, facsimile, digitized voice and lengthy alphanumeric

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[19] See, TRX Transportation Telephone Company ("TRX Transtel"), Request for Pioneers Preference for Personal Communications Service, PP-77 (May 4, 1992).

[20] See, PacTel Paging, Request for a Pioneers Preference for a Common Carrier Advanced Architecture Paging Service, PP-62 (August 2, 1991).

messages will be able to be offered and to co-exist."[21]

The spectrum requested by PacTel for this messaging service was "...all of the reserve spectrum in the 930-931 MHz band." A final Commission decision on the 900 MHz narrowband PCS has not been made, however, it is believed that the Commission will take action on narrowband PCS this summer. Further, it is certain that part of the available PCS spectrum will be used for similar advanced paging and messaging concepts.

Accordingly, spectrum already exists within the PCS allocation for services such as LMS. Therefore, the Commission should be extremely cautious about opening up AVM spectrum for services that are already the subject of other Commission proceedings. The Commission should not authorize use of the 902-928 MHz band for PCS-like services.

Not only is there other spectrum available for LMS, other location and messaging services are already being provided over existing networks. At a recent Washington, D.C. conference sponsored by the Intelligent Vehicle Highway Systems (IVHS) national association: IVHS America, and several vendors described location and messaging systems based on various transmission media e.g., satellite networks, FM subcarrier networks, cellular networks and SMR networks. For example, the cellular network, with its ubiquitous coverage and planned deployment of Cellular Digital Packet Data (CDPD), could easily provide LMS without the

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[21] Id, at 6.

disruption the current proceeding will have on both the AVM and current Part 15 industry. Accordingly, AVM is just another service that can be provided by other licensed services.

There is no valid need to, nor public interest in, completely disrupting a multi-million dollar unlicensed industry by greatly expanding the services offered by AVM licensees. Commission indorsement of a licensed "private carrier" in the same spectrum with unlicensed commercial and consumer devices to provide

govern these digital spread spectrum phones permit higher power than that authorized for the conventional analog cordless phones. Moreover, being digital with higher power than conventional cordless phones, they will overcome the main deficiencies of analog cordless phones: range and privacy.

Analog cordless phones which are extremely low in power and subject to interception have, nonetheless, achieved a remarkable acceptance in the marketplace. Approximately 50 million cordless phones have been sold in the last 5 years and 16 million cordless phones were sold in 1992 alone. It is anticipated that the new digital cordless phones, with greater range and improved privacy will acquire similar or better acceptance in the marketplace. The public interest would be ill-served by expanding the permissible use of the 900 MHz band and granting spectrum rights to exclusive licensees in the same band occupied by millions of consumer controlled cordless phones.

Similarly, others are adopting Part 15 digital wireless technology for the business environment. Our market research reveals that several large companies will be making product announcements in the next few months introducing wireless business phone systems which operate in the 900 MHz band.[23] These and other systems would be subject to increased interference threats both to the AVM systems and from them to a host of users including public safety organizations, hospitals, etc. If the current AVM interim

[23] Spectralink is currently shipping a 900 MHz wireless PBX and Ericsson

rules are adopted and expanded to allow location and messaging services, widespread interference is inevitable.

The Commission's proposal to license a limited number of companies to provide a service that is already being provided by more advanced technology in other bands is unwarranted. To license that service in the midst of an unlicensed band in which hundreds of thousands of devices are currently operating and millions more are soon to be introduced cannot be supported on any rational public interest basis. The proposal, in fact, turns the public interest on its head.

The public interest would be better served by a thorough evaluation and balancing of the public interest in a comprehensive review of all facets of the use of this band. The public interest would be poorly served if millions of consumers and thousands of business activities were denied interference-free wireless access because a thorough and complete understanding of the competing uses of this band is not undertaken.

G. THE COMMISSIONS PROPOSAL TO LICENSE THIS SERVICE IGNORES RECENT LEGISLATIVE ACTIONS TO PROVIDE AUCTION AUTHORITY TO THE FCC AND IGNORES LONG-STANDING POLICY AGAINST WAREHOUSING SPECTRUM.

The Commission proposes to license wideband AVM systems in this proceeding by grandfathering existing licensees. Most of the grandfathered systems are not yet built. The Commission, in 1992, granted existing wideband licensees a waiver to the eight month

construction time.[24] PacTel, which has hundreds of licenses in all major cities, subsequently suspended construction on unbuilt systems pending the conclusion of this proceeding. In effect, the Commission is proposing to grant licenses to entities that are warehousing spectrum. Under normal conditions, this would elicit Commission sanctions.

In contrast, the Commission has proposed auctions for the PCS spectrum. As noted earlier, much of the location and messaging service components of this proceeding will be provided in the PCS allocation at both 900 MHz and 2 GHz. Administration advocates have told Congress that up to 7 billion dollars over the next several years could be realized from auctioning spectrum. The House and Senate have both voted bills out of committee to provide auction authority. It is likely the Commission will have auction authority granted to them this summer.

In line with the newly granted auction authority, it would appear that the equitable approach would be to refuse to grandfather any systems (especially those unbuilt) and to grant future AVM licenses only in accordance with established Commission rules governing competitive bidding.

To do otherwise would be perceived as rewarding the warehousing of spectrum and doing so on the very eve of the grant of spectrum auction authority.

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[24] NPRM at 2.